

## Proposed Project

Upper Little Patuxent Watershed

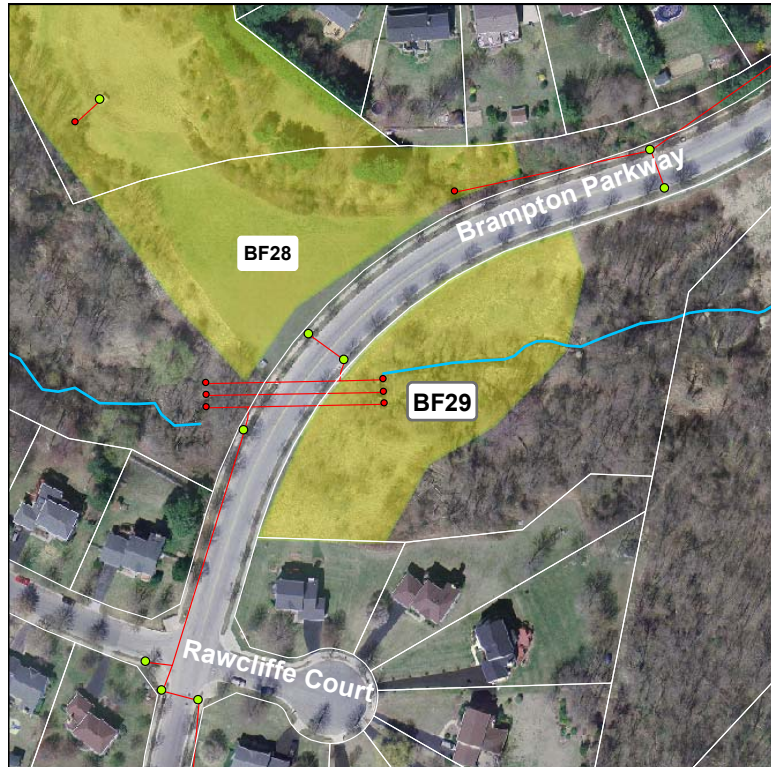
**Project Number:** BF29  
**Subwatershed:** Red Hill Branch

**Project Type:** Riparian Buffer  
Replacement / Reforestation  
**Project Size:** Approx. 250 feet in length /  
1.19 acres

**Project Location:** Behind homes on  
Rawcliffe Court and adjacent to Brampton  
Parkway.

**Project Description:** The outlined area  
shown in the map is currently mostly  
wooded but there are areas where  
additional planting would be beneficial,  
including native shade-tolerant shrubs and  
bushes along the stream banks. Field  
verification of the site identified several  
invasive species that should be sprayed or  
removed prior to planting the area.

Use of volunteer assistance for site  
preparation, planting and necessary  
maintenance and monitoring of the site  
could help reduce overall project cost.



### Project Benefits:

Stabilization	Additional trees and shrubs will help stabilize the stream bank.
Habitat	The project will provide additional terrestrial forest habitat.
Water Quality	A more established buffer will provide shading effects to reduce water temperature and will trap runoff and pollutants such as fertilizers from the adjacent property.

### Project Constraints:

Environmental	No environmental/permitting constraints are present.
Property Ownership	This property is on County owned open space (Brampton Hills natural resource open space and Howard County Recreation and Parks forest conservation easement).
Facility Access	Access to this site is obtained from Brampton Parkway.
Design / Construction	No major design or construction constraints are present. The design should incorporate native vegetation and a marked no-mow zone for understory development.

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### Cost Detail:

ITEM	QTY	UNITS	UNIT COST	TOTAL (Volunteer Labor)	TOTAL (Without Volunteer Labor)
<b>Riparian Buffer Replacement</b>					
Plant Material (trees)	1.19	AC	\$3,750.00	\$4,463	\$4,463
Plant Material (shrubs)	1.19	AC	\$2,725.00	\$3,243	\$3,243
Mulch, Tree Shelter	810	PLANTS	\$6.00	\$4,860	\$4,860
Cost to Plant	810	PLANTS	\$6.00	\$0	\$4,860
Site Preparation (volunteer)		AC	\$0.00	\$0	\$0
Basic Site Maintenance and Monitoring (volunteer)		AC	\$0.00	\$0	\$0
<b>Direct Construction Subtotal</b>				\$12,565	\$17,425
Base Construction Cost				\$12,565	\$17,425
Mobilization (10% of Directs or \$1,000)				\$0	\$0
<b>Subtotal</b>				\$12,565	\$17,425
Contingency (30%)				\$3,769	\$5,227
<b>Construction Subtotal</b>				\$16,334	\$22,652
Env't'l Studies / Permitting (5% of Construction or \$1,000)				\$0	\$0
Landscape Design and Surveys (25% of Construction or \$5,000)				\$0	\$0
<b>Total Capital Cost</b>				<b>\$16,334</b>	<b>\$22,652</b>
<b>Operations and Maintenance Costs</b>					
Annual Maintenance	5	Percent		\$628	\$871
Discount Rate	5	Percent			
Expected Life	5	Years			
<b>Net Present Value of Annual Costs</b>				\$2,720	\$3,772
<b>Life Cycle Cost</b>				<b>\$19,100</b>	<b>\$26,500</b>

### Cost Notes and Assumptions:

Project costs were derived for both volunteer and paid labor. In calculating costs for volunteer labor it is assumed that local volunteer organizations could accomplish the project with County assistance and oversight. Site preparation, planting and any necessary maintenance and monitoring would be conducted by volunteers.

Planting density is planned at 1 tree or shrub planted at 8 foot intervals for a total of 681 plants per acre.

Size and species of trees and shrub plant material is based on approved Howard County Recreation and Parks information and is typically a 3-4 foot plant. Use of more mature or more immature plant material would affect the planting density and cost per plant.

Cost of plant material is based on 2009 survey of local and regional wholesale native plant nurseries. Plant material (seedlings) may also be obtained from the Maryland Department of Natural Resources, State Forest Tree Nursery at a much reduced cost or through Howard County's Stream ReLeaf program at no cost.